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## Digital Cameras... What's the big deal?

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Instant gratification is the first big deal about digital cameras, since you can review the images almost instantly. On the spot changes in picture composition without the waste of film or waiting for the return of lab film is the economic & time resource deal. Don't like what you see? Erase it and try again. Easily transfer pictures to a computer and post process the images (lighten, sharpen, color correct, crop, etc) with an inexpensive software package. There is no film to develop or development costs, no labs, and no waiting. Within minutes, captured pictures can be easily and privately transmitted via e-mail to the office, clients, family, and friends.

Digital camera purchases have surpassed conventional 35-mm SLR camera purchases for the past 3 years. Entry-level point-and-shoot cameras costing less than \$1,000 are the biggest market share with business use growing significantly. Three overlapping market segments have emerged: family, business, and semiprofessional users. The availability of inexpensive CD-Writers for photo storage and printers capable of photo-realistic output make a digital camera a smart add-on. PC Magazine Online has two excellent articles about the present and future of digital cameras.

Crossing the Threshold: Digital Cameras - PC Magazine - from February 10, 1998.

<http://www.zdnet.com/pcmag/features/digicam2/open.htm>

Digital Cameras: Closing the Gap - PC Magazine - from January 19, 1999.

<http://www.zdnet.com/pcmag/features/digicam99/index.html>

Here are three summaries of digital camera uses in our work.

### Pete Fields, Bridge Inspection Engineer

Digital photography has been a great benefit for the Bridge Inspection Team in Vancouver Washington. The obvious advantages are that photographs are immediately available after downloading from the camera to the personal computer, the photographs can be resized or cropped on the personal computer, and we now have the ability to lighten or darken the photographs. Being able to manipulate the photographs after they are taken is a real advantage.



**Federal Highway Administration**



The biggest advantage to the bridge inspection team is that the photographs are now data. They are simply another field in our database that stores a bit map image. In the old system there was a minimum of 1 page in each 8 page report that contained hard copy photographs. This page would always have to be copied separately from the black and white pages. Also, if someone wanted all the bridge pictures for a certain park, we would go through by hand and pull out the color pages for copying.



Now the photographs are stored in our database, right along side of the other bridge data (length, type, location, material, etc.). Someone could ask for all the pictures associated with bridges over 50 feet that are concrete in Yellowstone National Park. Being able to ask questions of the database and have the pictures be part of the answer is a definite improvement. Also, the color pages of the bridge report are simply another page that is printed out (on a color printer) along with the rest of report. This makes the report stand alone. We would not have to pull out the color page, make one copy, and then insert it into the black and white pages. The days of managing hard copy photographs are over, our pictures are just another piece in the database, as they should be.

### John Snyder, Project Engineer

I experimented with the camera for about a month. To view the files, I downloaded a free trial version of Photoshop Deluxe, or something like that. I took a total of about 50 images, which I downloaded to my laptop with the camera software. I was impressed with the quality of the images (1280 x 1000 fine). One thing I like about the digital technology is that you only have to "keep" the images which really show what you want.



With a conventional camera you may take 5 to 10 photos of an operation the contractor has going, to make sure you have at least two or three which look good and show the basic work. You have to pay for developing a lot of pictures which you may end up throwing away. With the digital, you can preview the images, and simply delete the ones which do not show the work very well. My intent was to do some testing with sending images to my Construction Operations Engineer as an attachment to E-mail, to simulate a scenario where you were having problems or needed answers to some contract issue in a hurry, and wanted to send images to show clearly what was going on. I never got this done, though. I think this would be one of the most important uses for these cameras in the field.

### Robin Gregory, Environmental Consultant

WFLHD generously allowed me to use their digital camera to document construction projects that I was reviewing. The project was to gather information about the erosion control measures and the process used to implement them on a variety of projects in Washington, Oregon, Alaska, Idaho, Montana and Wyoming. I used the camera in the month of October and early November so was able to use it in a variety of weather and light conditions. To look at these projects I had to travel both by car and by airplane. The folks at WFLHD Technology Development stored the photos on a CD for me to use in the production of my report.

I believe that the camera performed very well. In the interest of time and wet weather I used the digital camera in its automatic settings mode as a point and shoot camera. I believe that it wouldn't have been too difficult to use with manual settings. In the dark gray, drizzly weather of southeast Alaska the photos were on the dark side and the camera sensors warned me that low light conditions existed. However the photo software had the capability to modify the pictures in a variety of ways. Post processing with an inexpensive software application produced a reasonable light and detail quality that probably would not have happened with conventional photo processing.

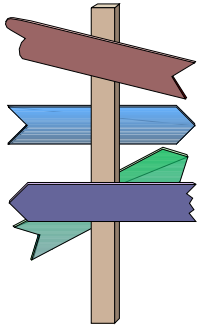


The camera has a zoom feature that works with a push button. The zoom feature is a 3x zoom, equivalent to a focal distance range of 35-105mm on a conventional 35mm camera. The "film" or memory cards are very easy to use; a small card fits in a slot in the camera. The quality of the pictures I was taking is adjustable. The higher the quality of the image that is recorded the more memory it requires. There is a read out of the number of exposures that are available for use and the quality of the photo that you have chosen. The batteries easily held the charge necessary for a day or two's photos and recharged in less than an hour. I didn't have a lap top computer with me in the field but I was able to review photos at the end of the day by hooking the camera up to the hotel TV with a single cable. That didn't allow me to go back to retake photos if they weren't good but I knew what I had.

The biggest benefit of using this technology came at an overnight stop back in the office. We were able to hook the camera to a lap top computer and a projector and have a slide show the day after I had been in the field. If I had used conventional film this would have been difficult because of the time needed to drop film off, get it processed and pick it up. This holds huge potential and I didn't have to spend a lot of money developing black shots of the lens cap. I was concerned about the well being of the camera when I used it in the rain which I would not have had with a fully manual 35mm camera. I worked to not get the camera wet and didn't have any problems. I found that the carrying case worked well. It can be stowed in the carry on bins on larger planes, but must be checked on the smaller commuter plans used in Alaska. Since I didn't carry a laptop in the field with me it would have been nice to have a camera that has a built in photo review feature but I think that was a minor problem. I believe that for most of my work requirements the digital camera is an advantage. I believe that the hard copy of the photos can and will be improved in the future.

Digital cameras are here to stay. In 1991, only one digital camera company existed, today there are numerous companies that each carry their own full product lines. Unlike conventional cameras, digital cameras are computer devices and can be found at your favorite camera and computer store or Internet shopping site. Kodak's Digital Learning Center <http://www.kodak.com/US/en/digital/dlc/>, is an easy to follow online resource designed to teach digital fundamentals. Without mentioning specific brands, vendors, or Internet sites, a key word search "digital cameras" found over 600,000 links to discussion groups, information, and companies/vendors that are selling, reviewing, and discussing digital cameras. Improvements in digital technology & features driven by corporate competition, will only cause sales to grow exponentially and improve prices vs. performance. The immediate advantages of simplistic picture capture, viewing & editing capabilities, and convenience far outweigh the disadvantage of price.

## ROAD SIGNS



"If you tell the truth you don't have to remember anything."

--Mark Twain

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We wish to thank all the individuals who have contributed articles for previous newsletters. If you are aware of a new technology, (or a fresh spin on an old one) please jot down your ideas and submit them via e-mail to me at the address below. Or, if you have an aversion to writing, just donate 15 minutes of your time for an interview (either by phone or in person), and I'll format the information for you. You can then review the article for accuracy (via e-mail or hard copy) and upon publication, you'll become famous in a matter of days. Remember, although we cater to road-related technology, ANY new technology information is welcome.

Please send all submissions to Kristi Swisher - (360.696.7572). Be sure your name, title, and phone number are the way you want them to appear in the article. Articles are subject to editor/ layout approval and may be condensed if space is limited.

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